

COMMONWEALTH NEUROTRAUMA INITIATIVE (CNI) TRUST FUND

TRIENNIAL REPORT For State Fiscal Years 2009, 2010, 2011 (July 1, 2008 through June 30, 2011)

The Code of Virginia Section 51.5-12.3(C)(4), amended in 2008 by Senate Bill 494, changed the requirement for the Commonwealth Neurotrauma Initiative (CNI) Trust Fund to submit an annual report to "...report triennially on October 1, to the Governor and the General Assembly, aggregate data on the operations and funding of the . . . [CNI Trust Fund]." The information contained herein constitutes the October 1, 2011 CNI Triennial (State Fiscal Years 2009, 2010 and 2011) Report.

EXECUTIVE SUMMARY

Background / Purpose: July 1, 1997, Senate Bill 1132 established the Commonwealth Neurotrauma Initiative (CNI) in the Code of Virginia. This bill authorized the CNI Trust Fund as a special nonreverting fund, as well as the CNI Advisory Board, a permanent collegial body affiliated with the State Board of Health. Effective July 1, 1998, Senate Bill 484 provided that (i) moneys in the CNI Trust Fund "shall be used solely to support grants for Virginia-based organizations, institutions, and researchers" and (ii) "fifty percent [of the moneys in the Fund] shall be allocated for research on the mechanisms and treatment of neurotrauma [referred to as "Option A" below] and fifty percent shall be allocated for rehabilitative services [referred to as "Option B" below]."

The 1998 legislation also created a mechanism for funding the CNI. Moneys are deposited into the Trust Fund pursuant to §18.2-271.1 (E) of the Code of Virginia. That section of the Code provides that a fee of \$105 shall be charged "for reinstatement of the driver's license of any person whose privilege or license has been suspended or revoked as a result of . . . [a specified traffic violation]," and \$25 of this fee "shall be transferred to the . . . [CNI] Trust Fund." This mechanism continues to operate, placing additional moneys into the Fund on an ongoing basis.

Leadership: The Commonwealth Neurotrauma Initiative (CNI) Trust Fund is administered by the Department of Rehabilitative Services (DRS). DRS provides management of the Grants Program, as well as staff support to the Advisory Board. The DRS Commissioner serves on the Advisory Board in an ex officio role. The only officer of the Advisory Board is the Chair. In December of the years 2008, 2009, and 2010, David B. Reid, Psy.D., was re-elected for additional one-year terms as Chair of the Advisory Board (per the bylaws of the Advisory Board, the Chair is eligible for re-election). Dr. Reid was originally appointed to the Board in July 2005 to serve a four-year term, filling the Board vacancy for a "*person licensed by a health regulatory board within the Department of Health Professions with experience in brain or spinal cord injury rehabilitative programs or services.*" He was initially elected as Board Chair in

December 2005 for a one-year term. Per bylaws, "...the chairperson shall be elected from the membership of the Advisory Board for a term of one year and shall be eligible for reelection."

Active Grants: In State Fiscal Year (SFY) 2009, the Fund had twelve (12) active community-based and research grants totaling \$1.5 million dollars. In SFY 2010, the Fund had seventeen (17) active grants totaling about \$2.0 million (including two grants that were on no-cost extensions). In SFY 2011, the Fund had eleven (11) active grants totaling \$1.4 million dollars (including three grants with no-cost extensions).

Grant Funding: At the close of SFY 2009, the Board approved three years of funding totaling \$2,810,607 to eight community-based rehabilitative service grantees (Brain Injury Association of Virginia; Brain Injury Resource and Development Center; Brain Injury Services of Southwest Virginia; Crossroads to Brain Injury Recovery; University of Virginia; Virginia Commonwealth University, Rehabilitation, Research and Training Center; Virginia Commonwealth University, The Partnership for People with Disabilities; and the Virginia Assistive Technology System). These eight grantees were awarded funding in response to applications received for a Request for Proposal released in State Fiscal Year '09 (contracts were awarded for SFY 2010, July 1, 2009 through June 30, 2012).

The Board approved three years of funding in the amount of \$447,728 to Virginia Commonwealth University's Department of Physical Medicine and Rehabilitation in SFY 2010 (July 1, 2009 through June 30, 2012) under the DRS Commissioner's authority designated in State Fiscal Year (SFY) 2004, as follows: budget Item 349#3c allows the Commissioner of the Department of Rehabilitative Services (DRS) to "... *reallocate up to \$500,000 from unexpended balances in the Commonwealth Neurotrauma Initiative Trust Fund to fund new grant awards for research on traumatic brain and spinal cord injuries.*" This grant award allows Virginia Commonwealth University to study screening, evaluation, and intervention programs for youth with brain injury in Virginia's Department of Juvenile Justice (DJJ) facilities. This grant, in partnership with the Virginia Department of Juvenile Justice (DJJ) and the Brain Injury Association of Virginia (BIAV), will formulate guidelines for brain injury screening, evaluation and intervention. Staff training manuals and related educational materials will be produced, and the grantee will also develop and facilitate DJJ staff training via live training supplemented by written materials. This grant also serves as the cash match portion to the Department of Rehabilitative Services' Traumatic Brain Injury Federal Grant #6 h21MCCO6763-05-02 awarded from the U.S. Department of Health and Human Services, Health Resources and Services Administration.

One *Option-B Community Based Rehabilitative Services* grantee, Woodrow Wilson Rehabilitation Center, received a grant to investigate the feasibility of establishing a specialized residential substance abuse treatment program for people with spinal cord injury and/or brain injury. A no-cost extension (i.e., no additional funding of grant dollars) was approved to allow them more time to complete grant activities. This extended their grant through June 30, 2010.

Four months into State Fiscal Year 2010, an *Option B - Community Based Rehabilitative Services* grantee, the Brain Injury Resource and Development Center realized it could not

provide the continuum of services it had hoped using the CNI funds it had been awarded. This was due to unanticipated expenditures that exceeded their grant funding. The grantee requested cancellation of their contract after several months (thereby canceling their contract for the remainder of Year One).

At the close of State Fiscal Year 2010, three *Option A - Research and Treatment on the Mechanisms of Neurotrauma* grantees at Virginia Commonwealth University were given approval for no-cost extensions ranging from six to twelve months to complete outstanding grant activities. This extended their grants through June 30, 2011 (no additional grant dollars were awarded; however, additional time to complete the grant research using previously awarded grant dollars was given).

At the close of State Fiscal Year 2010, seven of the *Option B - Community Based Rehabilitative Services* grantees requested carryover from Year One to Year Two of their contracts, totaling \$219,215 in carryover dollars. These were funds that were not spent in Year One as originally anticipated due to delayed start up (common with grantees). This increased their Year Two, State Fiscal Year 2011, available balances by \$219,215 for a total of \$1,046,500 available to those grantees in State Fiscal Year 2011.

Also at the close of State Fiscal Year 2010, one *Option B - Community Based Rehabilitative Services* grantee originally scheduled to end June 30, 2009 - Woodrow Wilson Rehabilitation Center - needed more time to complete their grant deliverables, which included a trial run to implement a specialized residential substance abuse treatment program on-site for people with spinal cord injury and brain injury. They were approved a second one-year no-cost extension (this does not involve additional grant award dollars, just more time to complete grant activities using previously awarded grant dollars), thereby extending the grant for one more year through June 30, 2011. This grant actually finished and turned in the report early, in January 2011.

Request For Proposals: Early in State Fiscal Year 2010, the CNI Trust Fund Advisory Board issued Request for Proposal (RFP) #10-002 "Development of a Web-Based Case Management Software System" to create a statewide case management software system to be used by the nine (9) state-funded Brain Injury Services (BIS) Programs contracted by DRS. The intention of the RFP was to assist the state-funded Brain Injury Services (BIS) Programs in managing and operating their programs, as well as to improve DRS' ability to provide general oversight of the contracts. The web-based Brain Injury Case Management Software (BICMS) System would provide a consistent approach to collecting, using, and reporting data. The nine state-funded Brain Injury Services (BIS) Programs would use the system to enhance the daily operation of their 12 programs and to prepare reports for DRS and for their own use. The statewide application would store each organization's data and would provide a web interface for displaying and entering staff and organizational data. Data for each organization would be accessible only to that organization, and to DRS. The contract was not to exceed a total of \$160,000 for development, testing, training, and implementation (nor could it exceed a designated \$80,000 per contract year). The Request for Proposals was canceled due to

insufficient applications received. DRS Information Systems staff felt that the cap on funding may have been the cause of the inadequate proposals received.

Near the close of State Fiscal Year 2010, the Board issued another Request for Proposals (RFP) #10-327 for the same purpose as described in prior paragraph: the “Development of a Web-Based Case Management Software System.” Six months after extensive review, including thorough analysis by DRS IS staff and approval from the Virginia Information Technology Association (VITA), it was given approval to be released. This time the Board increased the available annual amount slightly, not to exceed a total of \$180,000 for development, testing, training, and implementation. The contract also could not exceed \$90,000 per contract year. The Fund received thirteen (13) responses to RFP # 10-327. Applications were reviewed by an internal review committee consisting of DRS Information Systems staff. As part of the review process, the Review Committee invited three of the applicants to give in-house demonstrations.

In the Fall of State Fiscal Year 2011, the entire review process was delayed slightly because of Secretary Hazel’s new directive that any information technology (IT) programs had to undergo a thorough review by a specified roundtable of IT state agency executives. CNI Fund staff and DRS IT prepared required documents and the RFP underwent a rigorous review and DRS was given approval to move forward with the RFP process and award. During the RFP and review process, Trust Fund staff noticed monthly revenue was declining significantly. DRS recommended to the CNI Trust Fund Advisory Board that it cancel its Request for Proposals (which resulted in no award being made). Over 18 months of work had been put into the Request for Proposals, the CNI Advisory Board decided to cancel the RFP in the best interest of the Fund.

The CNI Trust Fund Advisory Board also voted to delay the release of another Request for Proposals (RFP) until State Fiscal Year 2013, unless revenue picks up considerably. The Board is taking strategic measures to allow the Fund to continue carrying out its mission while being sound fiscal stewards of Fund dollars.

Financial Status: As noted, six months into SFY 2011, revenue into the Fund had consistently decreased at an alarming rate averaging \$87,652 per month versus \$95,000 to \$110,000 per month, which the Fund had been receiving consistently. DRS staff informed the Advisory Board that, due to the sharp decline in monthly revenue, the cash balance of the Fund had been diminished which affected the ability of the Fund to pay grantees’ expenditures. Due to the decrease in revenue, DRS took action by modifying the reimbursement basis of three contracts from quarterly allotment to a monthly expense reimbursement arrangement (which is how most grants in the Fund operate). This change helped with the cash flow of the Fund and assisted with cash reimbursement to grantees.

As the monthly revenue into the Fund continued to decline during SFY 2011, in an effort to continue to be able to meet grant expenditures, the Board decided at its March 2011 meeting to not approve any further carryover requests from SFY 2011 to SFY 2012. If a grantee requests carryover of funds from SFY 2011 to SFY 2012, the request will be considered; however, if approved, the carryover dollars cannot be expended until State Fiscal Year 2013 (historically that

carryover money would have been allowed to be expended during the following fiscal year). This arrangement will require a request for a no-cost extension.

Additionally, as a cost savings measure to counter the decrease in revenue into the Fund in State Fiscal Year 2011 (as well as projections from the Virginia Department of Taxation that revenue for the Fund will likely continue to decline through Fiscal Year 2012), the Advisory Board decided to institute an across the board 11% reduction in SFY 2012 contracts, effective July 1, 2011). This decision was made at the Board's quarterly business meeting on Friday, March 11, 2011. The grantees were given a month to let the Board staff know how they wanted to modify their current Scope of Services. Most grantee spending trends for Year Two indicated that the reduction would not substantively impact the ability of a grantee to continue its activities and meet its deliverables.

Program Operations: In State Fiscal Year 2009 (July 1, 2008 through June 30, 2009), the Advisory Board of the Commonwealth Neurotrauma Initiative (CNI) Trust Fund held four quarterly business meetings, per bylaws. In addition, the Board held **Community Colloquium** in which current *Option B - Community-based Rehabilitative Grants* presented to the Advisory Board and fellow grantees on their grant activities as well as results and progress to date. In SFY 2010 (July 1, 2009 through June 30, 2010), the Board held four quarterly business meetings, per bylaws, as well as an **Research Colloquium** in which current *Option A - Research on the Mechanisms and Treatment of Neurotrauma* grantees presented to the Advisory Board and fellow grantees on their research activities as well as results and progress to date. In SFY 2011 (July 1, 2010 through June 30, 2011), the Advisory Board held its four mandatory quarterly business meetings, per bylaws.

Advisory Board: There were no new Advisory Board members appointed to the Commonwealth Neurotrauma Initiative Trust Fund Advisory Board in State Fiscal Years 2009, 2010, or 2011 (as no terms expired during that time period). The next Board appointments will take place in SFY 2013, effective July 1, 2012, for two upcoming vacancies.

Administrative Staff: In Fiscal Years 2009, 2010 and the first half of 2011, administrative staff for the Fund consisted of one full-time position (CNI Trust Fund Program Specialist who administers the Fund and provides staff support to the Advisory Board); and two part-time (15% and 10%) positions (Manager of the DRS Brain Injury Services Coordination Unit, and Administrative and Fiscal Specialist). The Manager of the DRS Brain Injury Services Coordination Unit provides supervisory oversight for the operation and management of the CNI Trust Fund program, and the Administrative and Fiscal specialist provides administrative support to the Fund as needed. Due to a substantial decrease in revenue into the Fund, funding for these two part-time positions (15% and 10% positions) was shifted to a funding source to reduce overall expenditures.

Program Funds: Moneys have been collected and deposited into the CNI Trust Fund since 1998, when a citizen donated \$25 to the Fund. The funding mechanism for CNI (a reinstatement fee charged to restore an operator's license that has been revoked or suspended for specified dangerous driving offenses) was established by legislation in 1998, a year after the

Trust Fund and the Advisory Board were established in the Code of Virginia. The CNI Trust Fund is a special nonreverting fund in the state treasury. The Fund balance has continually increased by a statutory funding mechanism in which a portion of the reinstatement fee is deposited into the Fund (\$25 out of a \$30 fee that is collected for reinstatement).

The Fund consists of grants, donations, and bequests from public or private sources and funds collected as provided in § 46.2-411 of the Code. The revenue in State Fiscal Year 2009 averaged about \$98,867 per month, or approximately \$1.18 million for the year; in State Fiscal Year 2010 it averaged about \$96,181 per month, or approximately \$1.15 million / year; and in State Fiscal Year 2011 it averaged about \$88,221 per month, or approximately \$1.05 million / year. Historically the revenue coming into the Fund has been relatively stable since it was established; however, the Fund began to see a slow, but steady monthly decline in revenue in State Fiscal Year 2011.

In State Fiscal Year 2009, staff and other administrative costs were budgeted at \$75,961 with \$76,820 in actual expenditures. For State Fiscal Year 2010, staff and other administrative costs were budgeted at \$78,085 with \$77,222 in actual expenditures. For State Fiscal Year 2011, staff and administrative costs were budgeted at \$83,120 with \$68,464 actually expended.

Due to decreased revenue into the Fund in SFY 2011, and projections from the Virginia Department of Taxation, revenue for the Fund will likely continue to decline through Fiscal Year 2012. Therefore, the Advisory Board decided to institute an across the board 11% reduction in all SFY 2012 contracts, July 1, 2011 (beginning of SFY '12). This decision was made at the Board's quarterly business meeting on Friday, March 11, 2011. Grantees were given a month to let the Board staff know how (and if) they wanted to modify their current Scope of Services. Most grantees indicated that the 11% reduction would not severely affect their ability to carry out grant activities and meet their contract deliverables.

History, Background and Legal Framework

Fiscal Year 1997-98 (SFY 1998): Effective July 1, 1997, Senate Bill 1132 (Acts of Assembly, c. 567) established the Commonwealth Neurotrauma Initiative (CNI). Article 12 of Chapter 2 of Title 32.1 (§32.1-73.1 *et seq.*) of the Code of Virginia authorizes establishment of the CNI Trust Fund, a special nonreverting fund, and the CNI Advisory Board, a permanent collegial body affiliated with the State Board of Health pursuant to §2.1-1.6 of the Code.

The first CNI Advisory Board members were sworn in on October 6, 1997. John D. Ward, M.D. was elected as the Board's first Chair during a meeting held on November 18, 1997. The Advisory Board adopted bylaws outlining the powers and duties of the Board on April 9, 1998. The first Annual Report was submitted to the Governor of Virginia on October 1, 1998.

Fiscal Year 1998-99 (SFY 1999): Effective July 1, 1998, Senate Bill 484 (Acts of Assembly, c. 703) amended the CNI law. As amended, §32.1-73.2 (B) provides that: (i) moneys in the CNI Trust Fund "shall be used solely to support grants for Virginia-based organizations,

institutions, and researchers” and (ii) “fifty percent [of the moneys in the Fund] shall be allocated for research on the mechanisms and treatment of neurotrauma [referred to as “*Option A*” below] and fifty percent shall be allocated for rehabilitative services [referred to as “*Option B*” below].”

The 1998 legislation also created a mechanism for funding the CNI. Moneys are deposited into the Trust Fund pursuant to §18.2-271.1 (E) of the Code of Virginia. That section of the Code provides that a fee of \$105 shall be charged “for reinstatement of the driver's license of any person whose privilege or license has been suspended or revoked as a result of . . . [a specified traffic violation],” and \$25 of this fee “shall be transferred to the . . . [CNI] Trust Fund.” This mechanism continues to operate, placing additional moneys into the Fund on an ongoing basis.

Fiscal Year 1999-2000 (SFY 2000): The Advisory Board completed draft policies and procedures for the administration of the Fund. In November, 1999, these draft policies and procedures were forwarded as recommendations to the State Board of Health for promulgation of regulations by the Virginia Board of Health.

Fiscal Year 2000-01 (SFY 2001): Regulations were promulgated by the Virginia Department of Health (VDH) and became effective on February 14, 2001. The first Request For Proposals (RFP), soliciting both *Option-A* and *Option-B* proposals, was issued on March 1, 2001.

Fiscal Year 2001-02 (SFY 2002): The Advisory Board approved thirteen (13) out of 25 proposals received in response to the RFP issued in State Fiscal Year 2001: eleven (11) *Option A* and fourteen (14) *Option B* proposals. The total amount approved for funding was \$3.5 million over a three-year period, 2002-2004. Information on the specific grant proposals funded during State Fiscal Year 2002 was included in the October 1, 2002 CNI Annual Report. Descriptive and contact information for all grantees is available on the CNI website at www.vacni.org. To protect the financial viability of the program as well as to streamline the process and enhance the administration of the grants program, the Advisory Board voted to issue future RFPs for *Option-A* and *Option-B* grants during alternating grant cycles occurring twice a year, as funds permit.

Fiscal Year 2002-03 (SFY 2003): Effective July 1, 2002, the General Assembly enacted legislation to amend and reenact Section 46.1-422 of the Code of Virginia, by adding Title 51.4a, Chapter 3.1 and repealing Article 12 (§32.173.1 et. seq.) of Chapter 2 of Title 32.1 relating to the Commonwealth Neurotrauma Initiative. The change designated the Department of Rehabilitative Services (DRS) as the agency responsible for administering the Commonwealth Neurotrauma Initiative (CNI) Trust Fund (transferred from the Department of Health) and authorized a portion of the Trust Fund (no more than 5% annually) to be used for administration (i.e., staff support for the CNI Advisory Board, cost of reviewing and monitoring grant proposals, cost of conducting *Option-A* and *Option-B* colloquia to report on grant activities). The legislation also changed the allocation of funds by specifying that “moneys in the Fund shall be used solely to support grants for Virginia-based organizations, institutions, and researchers” as follows: (i) “forty-seven and one-half percent [of the moneys in the Fund] shall be allocated for research on the mechanisms and treatment of neurotrauma and (ii) forty seven and one half percent shall be allocated for rehabilitative services, and (iii) five percent shall be

allocated for the Department of Rehabilitative Services' costs for administering and staffing the Commonwealth Neurotrauma Initiative Advisory Board.”

A Request For Proposals (RFP) for *Option A - Research on the Mechanisms and Treatment of Neurotrauma* was issued February 1, 2003, with a deadline of April 1, 2003 for receipt of applications. The Advisory Board approved eight (8) of fourteen (14) *Option A* proposals received in response to the RFP. The total amount approved for funding was \$2,096,301 over a three-year period (beginning in 2004 and ending in 2006). Information on the specific grant proposals approved for funding under the 2003 RFP by the Advisory Board at its December 11, 2002 (*Option B*) and June 25, 2003 (*Option A*) meetings was reported in the October 1, 2003 CNI Annual Report. Descriptive and contact information for all grantees is available on the CNI website at www.vacni.org.

During State Fiscal Year 2003 the CNI Trust Fund awarded \$1,571,103 in grant funding to seven (7) *Option B* proposals. Five (5) grantees approaching the end of their first grant year requested carryover of funds to Year Two; the total amount of new grant funding disbursed during SFY 2003 was \$1,985,067. Administrative costs were budgeted at \$60,000; \$48,752 was actually expended.

Fiscal Year 2003-04 (SFY 2004): On April 22, 2004 the Commonwealth Neurotrauma Initiative (CNI) Advisory Board held the inaugural ***Triennial Emily Couric Research Colloquium*** in Richmond. The Colloquium was named in recognition of the late Senator Emily Couric, whose efforts created the initial legislation for the Trust Fund. The *Research Colloquium* provided an opportunity for CNI research grantees to highlight their projects and report results to the Board and to fellow grantees. It also provided a unique forum for Virginia researchers to network and share resources with one another. Members of the CNI Advisory Board, thirteen (13) research grantees, and other interested parties attended or participated in the Colloquium. Steve Harms, Deputy Secretary of Health and Human Resources, was a guest speaker. A broader goal of the Colloquium was achieved when several researchers discussed plans for conducting future collaborative research projects with their colleagues across the Commonwealth.

A budget amendment - Budget Item 349#3c - was passed during 2004 General Assembly that empowers the Commissioner of the Department of Rehabilitative Services (DRS) to *“require applicants to submit a plan to achieve self-sufficiency by the end of the grant award cycle in order to receive funding consideration.”* It also allows the Commissioner to redistribute unspent grant funds from prior years for new research activities (*“... reallocate up to \$500,000 from unexpended balances in the Commonwealth Neurotrauma Initiative Trust Fund to fund new grant awards for research on traumatic brain and spinal cord injuries.”*).

During this reporting period, the Advisory Board did not issue a Request For Proposals (RFPs). To support the grant awards approved in previous years, funds were encumbered through State Fiscal Year 2006. During 2004, one *Option B – Community-based Rehabilitative Services* grantee funded initially in 2003 was awarded second and third years of funding. Another *Option B* grantee funded initially in 2003 was awarded a second year of funding, with

funding for the third year contingent upon review of their progress by the Advisory Board in 2004.

A total of nine (9) grantees requested carryover of grant funds from 2003 to 2004. Seven (7) of the carryover requests came from *Option B- Community-based Rehabilitative Services* grantees: six grantees carried funds from Year One to Year Two, and one grantee carried funds from Year Two to Year Three. Two *Option A* research grantees asked for and received approval for carryover of funds to the third and final year of their grant awards. Two *Option A* research grants (from the inaugural round of research awards in 2002) completed their grant years during 2004. Note that both research grantees had requested funding for only two years, rather than the more common request for three years of funding.

For State Fiscal Year 2004, staff administrative costs were budgeted at \$80,000; \$67,000 was actually expended. A full-time Program Specialist was hired in November 2003 when the previous staff person retired in June. CNI funds a full-time Program Specialist and two additional part-time staff for program and fiscal management.

Fiscal Year 2004-05 (SFY 2005): On November 5, 2004, the Commonwealth Neurotrauma Initiative (CNI) Advisory Board held the first biennial *Community Grants Colloquium* in Richmond. At this forum, Community Rehabilitative Services grantees reported on their CNI-funded programs and services for people with brain injury and spinal cord injury in Virginia.

The four-year terms of two CNI Advisory Board members ended on June 30, 2004. Dr. Gregory Helm of the University of Virginia (UVA) Medical Center in Charlottesville and Dr. Richard Bendall of Lynchburg were appointed to fill the vacancies. They served four-year terms beginning July 1, 2004 and ending June 30, 2008. Dr. Helm, a neurosurgeon, was the person who originally contacted the late Senator Emily Couric requesting that the Commonwealth find a way to provide funding for neurotrauma research. As a result, Senator Couric patroned legislation that resulted in the establishment of the CNI Trust Fund and an Advisory Board, as well as subsequent legislation creating a funding mechanism for the Fund.

The revenue for the CNI Trust Fund averaged about \$114,000 per month or about \$1.36 million for SFY 2005. At the end of this reporting period, the balance of funds available for grant awards was approximately \$61,000. This amount included funds unencumbered for grant or administrative costs, unexpended grant dollars returned to the Fund, and reinstatement fee revenue. An additional, \$80,000 was obligated and approved by the Advisory Board and budgeted for administrative costs during 2006.

Fiscal Year 2005-06 (SFY 2006): In December of 2005, David B. Reid, Psy.D., was elected Chair for a one-year term. Per Board bylaws, the Chair is eligible for re-election after a one-year term. Dr. Reid filled the Board position of “*One person licensed by a health regulatory board within the Department of Health Professions with experience in brain or spinal cord injury rehabilitative programs or services.*”

The Advisory Board issued Request For Proposals (RFP) #06-327 on April 5, 2006 with a due date of June 5, 2006 for *Option B - Community-Based Rehabilitative Services* to establish contracts to develop, expand, or improve community-based rehabilitative programs / services for individuals experiencing traumatic spinal cord or traumatic brain injuries or both. The Board received sixteen (16) proposals and funded seven (7) for a total of \$2,075,183. The one to three year contract periods began in SFY 2007 and will end in SFY 2009.

During this State Fiscal Year, a total of seven (7) grants completed their final year of funding. Six (6) of the grants were *Option B – Community-based Rehabilitative Services* grants which were slated to end December 31, 2005. Of these six, four received no-cost extensions ranging from one to six months in duration. The seventh grant that completed its final year of funding in SFY 2006 was an *Option A* research grantee that was awarded funding under the FY '04 budget amendment granting the DRS Commissioner authority to reallocate unexpended balances in the Trust Fund.

Also, during this reporting period, a total of twelve (12) grantees received “no cost extensions.” Five (5) of these were *Option B – Community-based Rehabilitative Services* grants that were slated to end December 31, 2005 and were extended for six months, with one granted a 12-month extension to FY '07. Five (5) grantees were *Option A* research projects (from the second round of research awards scheduled to end July 31, 2006). Two of the twelve grantees receiving “no cost extensions” were awarded under the Commissioner’s authority to reallocate unexpended fund balances for research grants.

A total of twelve (12) grantees requested carryover of grant funds from SFY 2005 to SFY 2006 during this reporting period. Five (5) of the grantees were *Option B – Community-based Rehabilitative Services* contracts that carried funds over from Year Two to Year Three, and seven (7) were *Option A* research contracts that carried funds over from Year Two to Year Three. Requests to “carry forward” unexpended funds from one grant year to the next are common due to inevitable delays or changes in hiring staff, ordering and equipping an office or laboratory, and similar challenges. In addition, grantees often request “no cost extensions” that allow them additional time to analyze data and prepare final reports at the conclusion of their active funding period.

For FY'06, staff administrative costs were budgeted at \$80,000; \$80,623 was actually expended.

Fiscal Year 2006-07 (SFY 2007): In December 2006, the sitting CNI Advisory Board chair, David B. Reid, Psy.D., was re-elected as Chair for another one-year term (per Board bylaws, the Chair is eligible for re-election after a term of one year).

The Advisory Board issued a Request For Proposal (RFP) #07-302 on January 30, 2007 with a due date of March 29, 2007, for *Option A - Research on the Mechanisms and Treatment of Neurotrauma*. The Board received twenty-one (21) proposals and funded six (6) of them for a total of \$2,364,562. Grant awards were given for one to three-year contract periods beginning in State Fiscal Year 2008 and ending in State Fiscal Year 2010. Grant recipients included:

- The University of Virginia; Principal Investigator (PI): Peter Patrick, Ph.D. (\$450,000/3 years) ***3rd year of funding contingent on board approval for release of funds.*
- Virginia Commonwealth University; PI: Dong Sun, MD, Ph.D. (\$434,408/3 years)
- Virginia Commonwealth University; PI: Christina Marmarou, Ph.D. (\$443,407/3 years)
- Virginia Commonwealth University; PI: Robert Hamm, Ph.D. (\$227,071/3 years)
- Virginia Commonwealth University; PI: Severn Churn, Ph.D. (\$360,928/3 years)
- Virginia Commonwealth University; PI: Thomas Reeves, Ph.D. (\$448,648/3 year)

The Fund had thirteen (13) active community-based and research grants totaling \$1,753,553. Five (5) grants completed their final year of funding. Four (4) of the grants that finished their contracts were *Option A - Research on the Mechanisms and Treatment of Neurotrauma* grants, slated to end July 31, 2006. All four had received previous no-cost extensions from one to six months in length. The fifth grant that completed its final year of funding was an *Option A* research grantee that completed its contract award during State Fiscal Year 2007 due to a second no-cost extension. This research grant was awarded under the Commissioner's authority to reallocate unexpended balances in the Fund for new research grants.

During this reporting period, two grantees received no-cost extensions. The first no-cost extension was an *Option B - Community Rehabilitative Services* grant that was awarded only one year of funding, originally slated to end June 30, 2007 and was granted an additional six months to finish program activities. The second aforementioned grantee was funded under *Option A - Research on the Mechanisms and Treatment of Neurotrauma* under the Commissioner's authority to reallocate unexpended balances for new research grants. Such extensions, which are typically granted for three to twelve months, allow grantees to use their unexpended funds to continue project activities (such as analyzing data, preparing reports, and distributing results) beyond the ending date of their grant award.

During this reporting period, four (4) grantees awarded under *Option B - Community-based Rehabilitative Services* were approved to carry forward grant funds from State Fiscal Year 2006 to State Fiscal Year 2007 totaling \$228,132. Also, one *Option B - Community-Based Rehabilitative Services* grantee, Wintergreen Adaptive Skiing, was awarded an additional \$5,800 for the second year of its grant contract due to an expansion in their scope of services involving accommodations for their consumers not originally anticipated as a requirement for the carrying out the activities of the grant.

The Advisory Board held four quarterly meetings in 2007. On September 21, 2006 the Board held the *2nd Emily Couric Research Colloquium* (and the third colloquium sponsored by the Trust Fund).

Halfway through State Fiscal Year 2007, administrative staff for the Fund increased from one full time position and one part-time (15%) position to an additional part-time (15%) position to assist with fiscal and administrative tasks.

In State Fiscal Year 2007, staff administrative costs were budgeted at \$81,804; \$63,216 was actually expended. Administrative costs for State Fiscal Year 2008 were budgeted at \$82,092.

Fiscal Year 2007-08 (SFY 2008): In December 2007, the current CNI Advisory Board chair, David B. Reid, Psy.D., was re-elected for an additional one-year term as Chair of the Advisory Board (per the bylaws of the Advisory Board, the Chair is eligible for re-election after a term of one-year).

During State Fiscal Year 2008 the Fund had fifteen (15) active community-based and research grants totaling \$1,866,108.

The Board approved funding to two grantees, the Brain Injury Association of Virginia (\$141,666.67) and Virginia Commonwealth University (\$22,756) under the Commissioner's authority given in State Fiscal Year (SFY) 2004: budget Item 349#3c allows the Commissioner of the Department of Rehabilitative Services (DRS) to "... *reallocate up to \$500,000 from unexpended balances in the Commonwealth Neurotrauma Initiative Trust Fund to fund new grant awards for research on traumatic brain and spinal cord injuries.*" The Brain Injury Association of Virginia (BIAV) was awarded funding from November 1, 2007-June 30, 2009 in the amount of \$141,666.67 (\$56,667 in State Fiscal Year 2008 and \$85,000 in State Fiscal Year 2009). BIAV was conducting a study of various methods to determine an effective way of providing outreach to people in the Commonwealth who sustain brain injuries. In March 2008, the Board approved funding for one year (April 2008-March 2009) in the amount of \$22,756 to Virginia Commonwealth University (VCU). Principal Investigator, Tony Gentry, Ph.D., OTR/L, researched the effectiveness of the concept of a "Smart Home" for people who experience cognitive impairment due to brain injury.

One Option B – Community-based Rehabilitative Services grantee, Woodrow Wilson Rehabilitation Center's very successful grant using the ERGYS electrical stimulation machine for people with spinal cord injury, completed its grant contract. The grant was originally slated to end June 30, 2007; however, a six-month no-cost extension through December 31, 2007 was approved to allow them to finish up their grant activities.

Two Option B – Community-based Rehabilitative Services grantees, the Brain Injury Resource & Development Center, Inc.'s grant to develop a clubhouse program for people with brain injury in the Roanoke area and Woodrow Wilson Rehabilitation Center's grant to investigate the feasibility of establishing a specialized residential substance abuse treatment program for people with spinal cord injury and brain injury, were approved to carry grant funds forward from State Fiscal Year 2008 to State Fiscal Year 2009 in the amount of \$192,000.

Requests to "carry forward" unexpended funds from one grant year to the next are common due to inevitable delays or changes in late start-up, hiring staff, ordering and equipping an office or laboratory, and similar challenges. In addition, grantees often request "no cost extensions" that allow them additional time to analyze data and prepare final reports at the conclusion of their active funding period.

Also, one *Option B - Community-based Rehabilitative Services* grantee, Wintergreen Adaptive Skiing, was awarded an additional \$13,800 for the third year of its grant contract due to an expansion in their scope of services involving accommodations for caregivers, something that was not originally anticipated as a requirement to execute grant activities.

In State Fiscal Year 2008, staff and other administrative costs were budgeted at \$83,892; \$75,036 was actually expended. Administrative costs for State Fiscal Year 2009 have been budgeted at \$93,892. The increase in funds will cover the cost of a Community Grants Colloquium to be sponsored by the CNI Advisory Board during SFY 2009.

Fiscal Year 2009-2011 (SFY 2009; SFY 2010; SFY2010): Further information on SFY 2009, SFY 2010, SFY 2010 program operations and funds is contained in the body of this CNI Triennial Report. Please refer to relevant sections above.

CNI Grant-Supported Publications

**Note: New publications are indicated with an asterisk*

Articles:

*Abidi N, Liang X, Parry MR, Williamson J, Gardiner D, Young HF, Marmarou CR (2010) Temporal course of traumatic axonal injury following diffuse traumatic brain injury in rodent over 90 days post-insult. *J Neurotrauma*, 27 (5) A-17.

Blackman, J.A., Patrick, P.D., Buck, M.L., Rust, R.S. Paroxysmal autonomic instability with dystonia following brain injury. *Arch Neurol*, 2004; 61:321-328.

Campbell, J.N., Low, B. Register, D. Churn, S.B. Calcineurin-dependent loss of dendritic spines following lateral fluid percussion injury in the rat. 2009. *Journal of Neurotrauma*. (NNS-0035, in press).

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Falo, M.C., Reeves, T.M. and Phillips, L.L.: Agrin expression during synaptogenesis induced by traumatic brain injury. *J. Neurotrauma* 25: 769-783, 2008.

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*Harris, J.L., Reeves, T.M., Phillips, L.L.: Phosphacan and Receptor Protein Tyrosine Phosphatase β Expression Mediates Differentiation-Induced Synaptogenesis. *Hippocampus*, 2009, in press.

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Li Y, Oskouian RJ, Day YJ, Kern JA, Linden J.
<http://www.ncbi.nlm.nih.gov/sites/entrez?Db=pubmed&Cmd=ShowDetailView&TermToSearch=16506485&ordinalpos=19&itool=EntrezSystem2.PEntrez.Pubmed.Pubmed_ResultsPanel.Pubmed_RVDocSum> Optimization of a mouse locomotor rating system to evaluate compression-induced spinal cord injury: correlation of locomotor and morphological injury indices. J Neurosurg Spine. 2006 Feb; 4(2): 165-73.

Lieu, A.S., Li, J.Z., Webb, D.J., Hankins G.R., Howng S.L., and Helm, G.A. Functions of G Protein-Coupled Receptor Kinase Interacting Protein 1 in Human Neuronal (NT2N) Cells. J. Neurosurg. 105:103-110, 2006.

*Low, B., Campbell, J.N., Kurz, J.E., Patel, S., Register, D.L., Churn, S.B. A cellular mechanism for dendritic spine loss following traumatic brain injury in rat. J. Neurotrauma (submitted).

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http://www.ncbi.nlm.nih.gov/sites/entrez?Db=pubmed&Cmd=ShowDetailView&TermToSearch=16506468&ordinalpos=20&itool=EntrezSystem2.PEntrez.Pubmed.Pubmed_ResultsPanel.Pubmed_RVDocSum> A comparison of adenosine A2A agonism and methylprednisolone in

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*Warren, K.M., Colley, B.S., Reeves, T.M., and Phillips, L.L.: Postinjury matrix metalloproteinase inhibition targeting the onset of synaptogenesis enhances synaptic efficacy and promotes long-term synapse stabilization. *J. Neurotrauma* 26: A77, 2009.

Books/Chapters:

*Campbell, JN, Kurz, JE, Churn, SB. Pathological Remodeling of Dendritic Spines. In Dendritic Spines: Biochemistry, Modeling and Properties. Louis R. Baylog, ed. Nova Science, 2009 (ISBN 978-60741-460-5).

*Churn, S.B. Cellular Mechanisms of Epileptogenesis. In Epilepsy Intech Publishing, 2011, (ISBN 978-953-307-226-5).

*Marmarou, C.R., Prieto, R., Keisuke, T, Young, H.F, Marmarou, and A. (2008) In Contemporary Neuroscience: Traumatic CNS Injury Animal Models, Impact Acceleration Model of Diffuse Traumatic Brain Injury (IAM-DTBI): Marmarou weight drop model. Humana Press, Totawa, NJ; 393 – 407.

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*Okonu K, Taya K, Marmarou CR, Ozisik P, Fazzina G, Kleindienst A, Gulsen S, Marmarou A (2008) The modulation of AQP4 by using PKC-
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*Taya K, Gulsen S, Okuno k, Prieto R, Marmarou CR, Marmarou A (2008) Modulation of AQP4 expression by the selective V1a receptor antagonist SR49059, decreases trauma-induced brain edema. Acta Neurochir Suppl. 102: 425-9. activator (phorbol myristate acetate) and V1a receptor antagonist (SR49059) following middle cerebral artery occlusion/reperfusion in the rat, Acta Neurochir Suppl 102: 431-6

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- *Lyeth, B.G., et al., *Prolonged memory impairment in the absence of hippocampal cell death following traumatic brain injury in the rat*. Brain Res, 1990. **526**(2): p. 249-58.
- *Singleton, M.W., Holbert, W.H., Lee, A.T., Bracey, J.M., Churn, S.B., *Modulation of CaM kinase II activity is coincident with induction of SE in the rat pilocarpine model*. Epilepsia, 2005. **46**: p. 1-12.

Additional Funding Received As the Result of CNI Funding:

“*Altered Excitatory Neurotransmission after Brain Trauma*” R01 NS049519. Principal Investigator: L.S. Satin; Agency: NINDS. 12/01/06 – 11/30/11. TDC: 1,250,000. The objective of this grant is to explore cellular and molecular mechanisms involved in brain trauma using a novel in vitro mode

“*Modulation of GABAA Receptors by Traumatic Brain Injury*” Principal Investigator: R. Philip Yeager; Sponsor: L.S. Satin; Agency NINDS; Kriegstein NRSA. 6/25/2006-6/24/2009. National Institutes of Health.